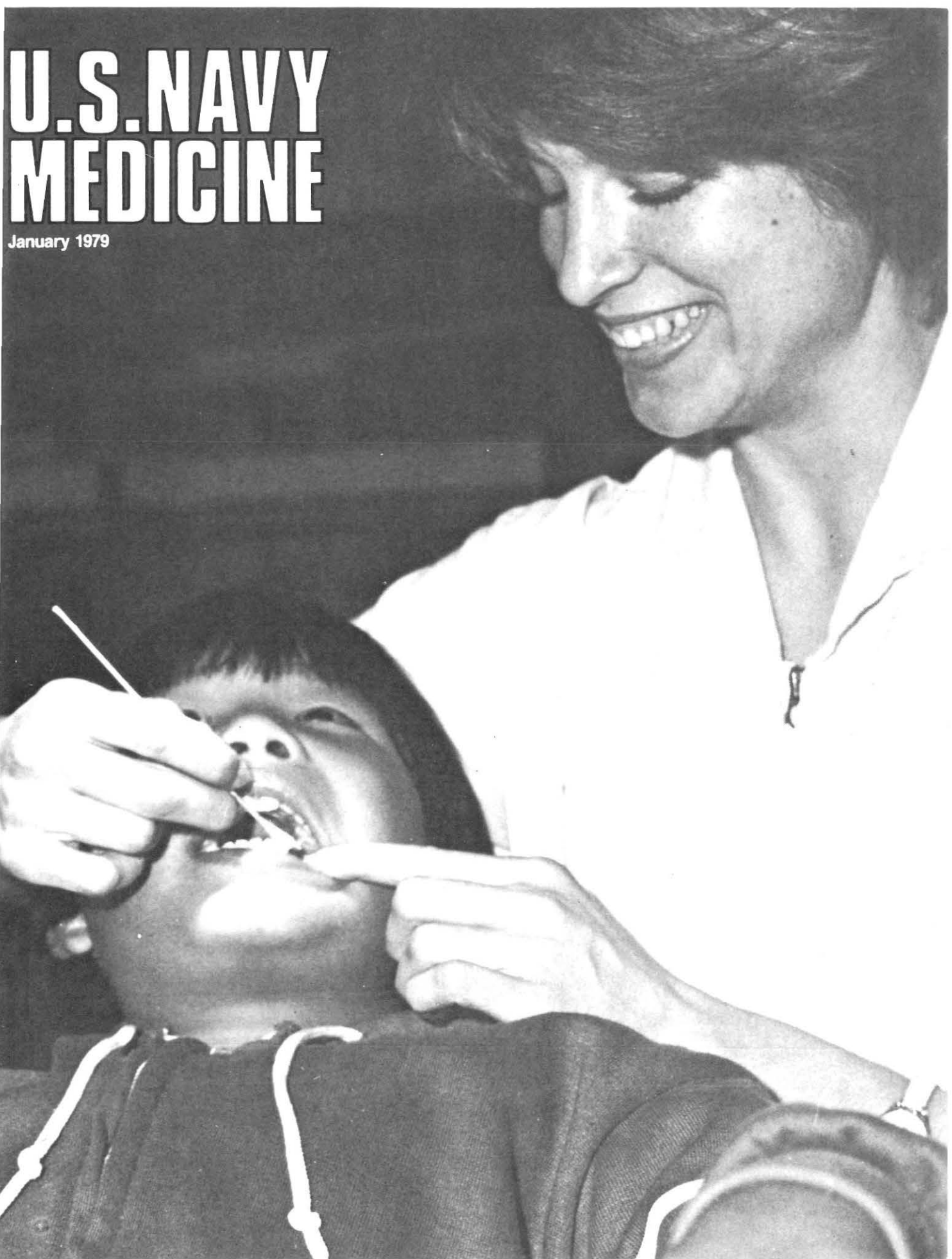


# U.S. NAVY MEDICINE

January 1979



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**COVER:** Again this year, Navy dental activities will be conducting special education and treatment programs in support of National Children's Dental Health Week, set for 4-10 February. During last year's observance, DT3 Joan Nelson captivated a student at Treasure Island (Calif.) Elementary School while applying topical fluoride.

# From the Surgeon General

## The Key to Our Future

The new year is upon us, and it is a time to look ahead. I feel it would be advantageous for us to take this opportunity to renew our personal interests in a pursuit that may have taken a back seat for one reason or another. That pursuit is research.

Research is the key to our future. We as a Medical Department must maintain an active research program or be limited to a "catch-up" existence.

As health care providers we simply cannot provide the best care with a reactive attitude. We must forge ahead, pave new roads, overcome our present limitations, and take charge of the future.

The best way to do that is by stimulating our inherent desire to question, probe, and explore the unknown through research.

I would encourage every member of the Medical Department to participate whenever possible in any program that involves research. At the very least, keep up with the latest literature providing background on the subjects most frequently confronted by, and of interest to, you.

We have an extremely active and very fine group of research institutes, labs, centers, and units located around the world. They have been instrumental in providing

positive solutions to some long-standing problems.

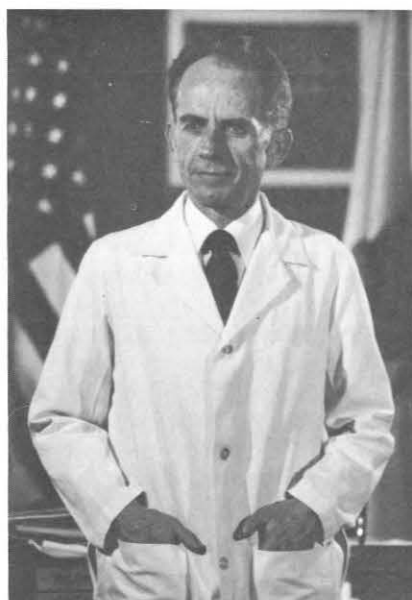
I urge you to take advantage of these facilities, and the information made available by them, for projects of your own.

Everyone cannot devote all of his or her time to engaging in pet projects. However, if you have an idea, explore it as far as you are able, and then pass it on for further development.

The present philosophy, commonly held by many, seems to be: Let's get through today and worry about tomorrow when it comes. Fortunately, we in Navy medicine have never had to contend with this attitude. We have always looked ahead.

This coming year promises to hold even bigger developments in all areas of Navy medicine, and particularly research. It should be a banner year, and with additional emphasis on personal research it can be nothing less.

My best wishes for 1979.



W.P. ARENTZEN  
Vice Admiral, Medical Corps  
United States Navy

## Department Rounds

During National Children's Dental Health Week, the Navy will again be doing its part in

# Making America's Youngsters Smile

Navy dental officers and dental technicians are gearing up for special activities in support of National Children's Dental Health Week, scheduled this year for 4-10 February.

The annual observance is sponsored by the American Dental Association to encourage good oral health habits among the nation's youngsters. In support of the ADA initiative, Navy Medical Department members at home and overseas will, wherever possible, be conducting dental education and treatment programs for the children of Navy and Marine Corps members—so long as these programs do not interfere with the primary mission of providing care to active-duty personnel. As in previous years, these special programs will usually be conducted during off-duty hours, to enable the largest possible number of children and parents to participate.

The theme for National Children's Dental Health Week this year will again be "Smile, America!" and ADA recommends that educational activities during the week promote proper brushing and flossing, use of fluorides, and regular dental visits. This year's observance, however, will place special emphasis on the relationship between good nutrition and dental health. Posters from ADA ("Sweet

snacks, no . . . sweet smiles, yes'') stress the importance of proper snacking habits—i.e., substitution of healthful fruits and vegetables for gooey treats.

In past years, Navy dental activities have been ingenious in devising programs for children that entertain as well as educate. Devices used have included skits, films, slide shows, demonstrations, and art contests on dental health subjects, in addition to examination of teeth and

application of topical fluorides. Gift packs given away to children have included toothbrushes and toothpaste, disclosing wafers, dental floss, and even disposable plastic mirrors.

With appealing teaching techniques, Navy dentists and dental technicians have started many thousands of children down the road to oral health. This year, they'll be at it again, going all out to add to that number.



A little horseplay helps . . .





A winning grin . . .



'Say ahhh . . .'



'Here's how they work . . .'



A rapt audience . . .



A poster winner . . .

# Dental Repair Tech School Relocated

The Dental Repair Technology, Class C School (course number B-198-0013)—formerly located at NRDC Norfolk, Va.—has completed its move to the Naval School of Dental Assisting and Technology (NSDAT) facility in San Diego, Calif.

The school has recently converted to a modularized, task-based course of instruction. Skills taught include applied physics; installation, maintenance, and repair of dental operating room and prosthetics laboratory equipment; accounting and financial management; and basic personnel and office management techniques.

Certain parts of the course are taught as "common core" modules with the Dental Assistant, Advanced, and Dental Laboratory Technology, Advanced, Class C Schools. These modules—which in-

clude Speech and Instructor Training, Logistics, Enlisted Evaluations, and Manuals and Publications—are designed to enable graduates to function more effectively as senior petty officers.

Upon satisfactory completion of the "common core" items, students receive an intensive course in the dental repair specialty, including both classroom instruction and on-the-job application of skills. Working under supervision of the NSDAT teaching staff and the staff of the Repair Department of NRDC San Diego, trainees are exposed to a variety of dental equipment and a range of dental repair situations.

The school has facilities for a maximum of 6 students for each 6-month class. The present facilitator/student ratio is 1:6, affording maximum opportunity for individualized instruction.

The staff of the Dental Repair Technology School is augmented in specific modules by staff members of the Dental Assistant, Advanced, Class C School, ensuring that the information presented is accurate and up-to-date. In addition, many short courses presented by manufacturers of dental equipment expose trainees to the latest developments in dental equipment technology.

Graduates of the Dental Repair Technology, Class C School earn the NEC 8732 and have the opportunity for assignment with the Fleet Marine Force, at selected overseas stations, and at naval regional dental centers.

Interested personnel should contact their Educational Services Office or their career counselor for information on admission requirements and application procedures.



DT1 Anderson (left) is explaining the mechanics of a dental operating unit to DT1 Mustain and DT2 Otto.

**Otto Fuel II** is a red-orange liquid torpedo fuel with a distinctive odor. Personnel who inhale it or contaminate their skin during torpedo fueling and maintenance operations may suffer serious toxic effects—problems that can be prevented by proper ventilation and the use of protective clothing.

The systemic absorption of OF II primarily causes acute cardiovascular changes. PGDN (1,2 propylene glycol dinitrate), the physiologically active component of the fuel, causes acute vasodilation. Nasal congestion, headaches, dizziness, nausea, and fainting may occur. Nitrated esters may convert hemoglobin into methemoglobin, but in OF II intoxication the levels of methemoglobin are not seriously elevated.

Workers who absorb a physiologically significant dose of OF II by inhalation or skin absorption complain of headache, often throbbing in nature, on the first few days of exposure. Tolerance then develops, and the headache disappears as long as exposure continues. When the worker returns to his job after a weekend without exposure, however, the first contact with OF II again produces headache. The presence of a narrow pulse pressure, due to elevated diastolic pressure, is a physical sign that supports a diagnosis of headache due to OF II. A second common sign of OF II toxicity is sudden loss of consciousness, usually due to orthostatic hypotension. The over-exposed worker passes out but recovers rapidly when removed from exposure.

**Controlled chamber exposures** have been conducted to determine the air levels of OF II that will not result in detectable detrimental effects on human health. Human responses to varying concentrations revealed that the first subjective effect was onset of mild headache—usually frontal in location. It was characterized initially as a feeling of pressure, followed by throbbing. Nasal congestion was not a problem and was reported only occasionally.

A few of those tested developed a mild headache with an eight-hour exposure to concentrations of OF II as low as 0.1 ppm. The majority of individuals developed a headache after exposure to 0.2 ppm for as little as four hours. A few were able to tolerate one-hour exposures to concentrations of 0.35, 0.5, and 1.5 ppm; however, exposure for longer periods resulted in headache. Exposure to OF II at 0.5 ppm for six hours resulted in the onset of severe disequilibrium. The subjects were unable to perform a modified Romberg test or a normal heel-to-toe test. At this point, they generally had severe headache but, if properly motivated, still possessed good manual coordination and were able to function intellectually. Exposure to OF II at 1.5 ppm caused onset of definite eye irritation, without conjunctivitis or excessive lacrimation, after 30-40 minutes.

Skin absorption of OF II may cause headaches, dizziness, and nausea. Overexposure can result from excessive skin contact. Since the effects of long-term exposure are not known, skin contact should be avoided. Contamination of skin can be identified by yellow discoloration.

OF II splashed into the eyes may cause severe irritation, and exposure to vapor may also produce eye irritation. Ingestion of OF II may cause disorders of the gastrointestinal tract and mucosal membranes, dilation of blood vessels, headaches, nausea, and dizziness. Although ingestion is unlikely to occur under normal working conditions, it could result in death.

Treatment of OF II toxicity consists in removal of the individual from exposure. Contaminated clothing should be removed and the skin flushed with water. There is no antidote; therefore, treatment of severe manifestations is symptomatic and supportive.

**BUMEDINST 6270.7A**, Otto Fuel II Health Precautions, requires that personnel exposed to OF II have preplacement and periodic health examinations. These examinations must include, as a minimum, a medical history with emphasis on the presence of cardiovascular disease, hypotension or hypertension, and frequent severe headaches. Each worker should have a comprehensive occupational history detailing prior exposure to any toxic gases, dusts, fumes, or chemicals.

Physical examination should place special emphasis on the cardiovascular and neurological systems. Liver function tests, complete blood count, BUN, and urinalysis are recommended but not required. A resting 12-lead EKG should be performed, and an exercise EKG, if indicated by the examining physician.

Medical personnel assigned to ships or facilities performing operations with OF II should regularly observe work areas to ensure that health precautions are observed. Local exhaust ventilation to control fuel vapor at its source is required in all operations involving OF II. For short-term emergencies, such as a spill, workers should use air-supplied respirators.

Workers should have clean, disposable coveralls and a neoprene apron. Hand protection is required. **BUMEDINST 6270.7A** lists disposable safety clothing available in the supply system. Face shields or chemical worker's goggles should be worn to prevent eye injury.

No eating, drinking, or smoking should be permitted in OF II handling areas. Workers should wash their hands before eating, drinking, or smoking after leaving the area.

In the event of a large spill, all personnel should evacuate the area until they can put on approved respiratory protective devices and appropriate protective equipment.

# Notes & Announcements

**In memoriam . . .** CAPT Edmund H. Frizzell, DC, USN (Ret.), died 20 Nov 1978, at age 63. He was born in Poplar Bluff, Mo., and graduated from Northwestern University. CAPT Frizzell was a member of the Retired Officers Association.

**Dental continuing education courses . . .** The following dental continuing education courses will be offered in April 1979:

*National Naval Dental Center, Bethesda, Md.*

Occlusion	2-4 April 1979
Fleet and Marine Support Operational Management Seminar	16-20 April 1979
Maxillofacial Prosthetics	30 April-2 May 1979

*Eleventh Naval District, San Diego, Calif.*

Oral Surgery	2-6 April 1979
Preventive Dentistry and Patient Motivation	23-26 April 1979

*U.S. Army Institute of Dental Research, Walter Reed Army Medical Center, Washington, D.C.*

Oral Diagnosis and Therapeutics	2-5 April 1979
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*Letterman Army Medical Center, San Francisco, Calif.*

Oral Surgery	30 April-3 May 1979
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Requests for courses administered by the Commandant, Eleventh Naval District, should be submitted to: Commandant, Eleventh Naval District (Code 37), San Diego, Calif. 92132. Applications for other dental continuing education courses should be submitted to: Commanding Officer, Naval Health Sciences Education and Training Command (Code 5), National Naval Medical Center, Bethesda, Md. 20014. Applications should arrive six weeks before the course begins.

**Continuing education for Navy nurses . . .** The Naval Health Sciences Education and Training Command will sponsor the following continuing education courses for Navy nurses:

*Development of a Personalized System of Learning* (18 contact hours)  
Bethesda, Md. 2-4 April 1979

New approaches to continuing education will be presented, with primary focus directed toward a comparison of a personalized system of instruction (PSI) model with different types of programmed instruction formats. The program is intended for those individuals involved

in planning and developing continuing education and patient education projects.

*Essentials of Senior Nursing Management* (30 contact hours)  
Bethesda, Md. 9-13 April 1979

This workshop is scheduled for selected senior Nurse Corps officers to update information and skills in executive management relating to leadership, decision-making, budgeting, and personnel relations.

The courses are open to Nurse Corps officers not currently assigned to an overseas billet. However, nurses assigned to Argentina, Newfoundland; Bermuda; Guantanamo Bay, Cuba; Keflavik, Iceland; and Roosevelt Roads, Puerto Rico, who have served at least six months on active duty, may apply. The courses are also open on a space-available basis to Nurse Corps officers of the inactive Reserve.

Nurse Corps officers wishing to attend these courses should apply to the Naval Health Sciences Education and Training Command (Code 7), National Naval Medical Center, Bethesda, Md. 20014, following procedures set forth in the BUMED Instruction 4651.1 series. Applications should be submitted four to six weeks before a course begins.

**AFIP course offered . . .** The Armed Forces Institute of Pathology will offer the following course:

*Research Methods for Cytologists* 23-27 April 1979

Pathologists, cytopathologists and cytotechnicians are sometimes confronted with problems concerning the pathology-biology of single cells they wish to investigate; however, their educational backgrounds may not have equipped them with more than superficial knowledge of the tools for carrying out a research investigation. Some of the most commonly used of these tools will be presented in theory and in practical instructions. Topics include Phase and Normanski interface contrast; methods for measuring size and volume; fluorescence methods in microscopy and flow-through devices; immunologic methods; tissue culture; and scanning and transmission electron microscopy. The course will help the participant to understand the scientific methods of carrying out an investigation with limited objectives and familiarize him with the more common means available today for the investigation of single cells.

For further information write to the Director, Armed Forces Institute of Pathology, ATTN: AFIP-EDZ, Washington, D.C. 20306.

**Alcoholism indoctrination course . . .** The Naval Alcohol Rehabilitation Center, Jacksonville, will offer a series



of alcoholism indoctrination courses for physicians, nurses, psychologists, and other professionals and paraprofessionals. The course has been approved for 80 hours of continuing medical education credit in Category I. The sessions will take place on the following dates:

12-23 Feb 1979	4-15 June 1979
19-30 March 1979	16-27 July 1979
16-27 April 1979	13-24 Aug 1979
14-25 May 1979	17-28 Sep 1979

Names of nominees to attend the course should be submitted seven days before the class begins. For further information write to: Commanding Officer, Naval Alcohol Rehabilitation Center, Jacksonville, Fla. or call Autovon 942-3473, Commercial (904) 772-3473.

**Residency and fellowship training . . .** The following medical residency and fellowship training programs will be available during FY 1979:

Specialty	Year Level (After GME-1)
<i>Residencies</i>	
Anesthesia	First and Second
Family Practice	First
Internal Medicine	First and Second
Obstetrics and Gynecology	First
Orthopedics	First
Otolaryngology	First
Pathology	First and Second
Pediatrics	First
Psychiatry	First
Surgery	First
<i>Fellowships</i>	
Infectious Disease	First
Maternal Fetal Medicine	First
Pulmonary Medicine	First and Second

Interested Medical Corps officers serving in fleet, operational/utilization tours should apply in accordance with BUMEDINST 1520.10G of 12 May 1976.

Applications for these programs should be submitted no later than 16 Feb 1979 to: Commanding Officer, Naval Health Sciences Education and Training Command (Code 4), National Naval Medical Center, Bethesda, Md. 20014.

**Preventive and occupational medicine course . . .** The second annual Review Course in Preventive and Occupational Medicine, will be held 28-31 March 1979, at the Drake Hotel, Chicago, Ill. The continuing education course is co-sponsored by the American College of Preventive Medicine and the Cook County Hospital Division of Occupational Medicine in the Department of Medicine, and is designed for physicians, nurses, and other health professionals.

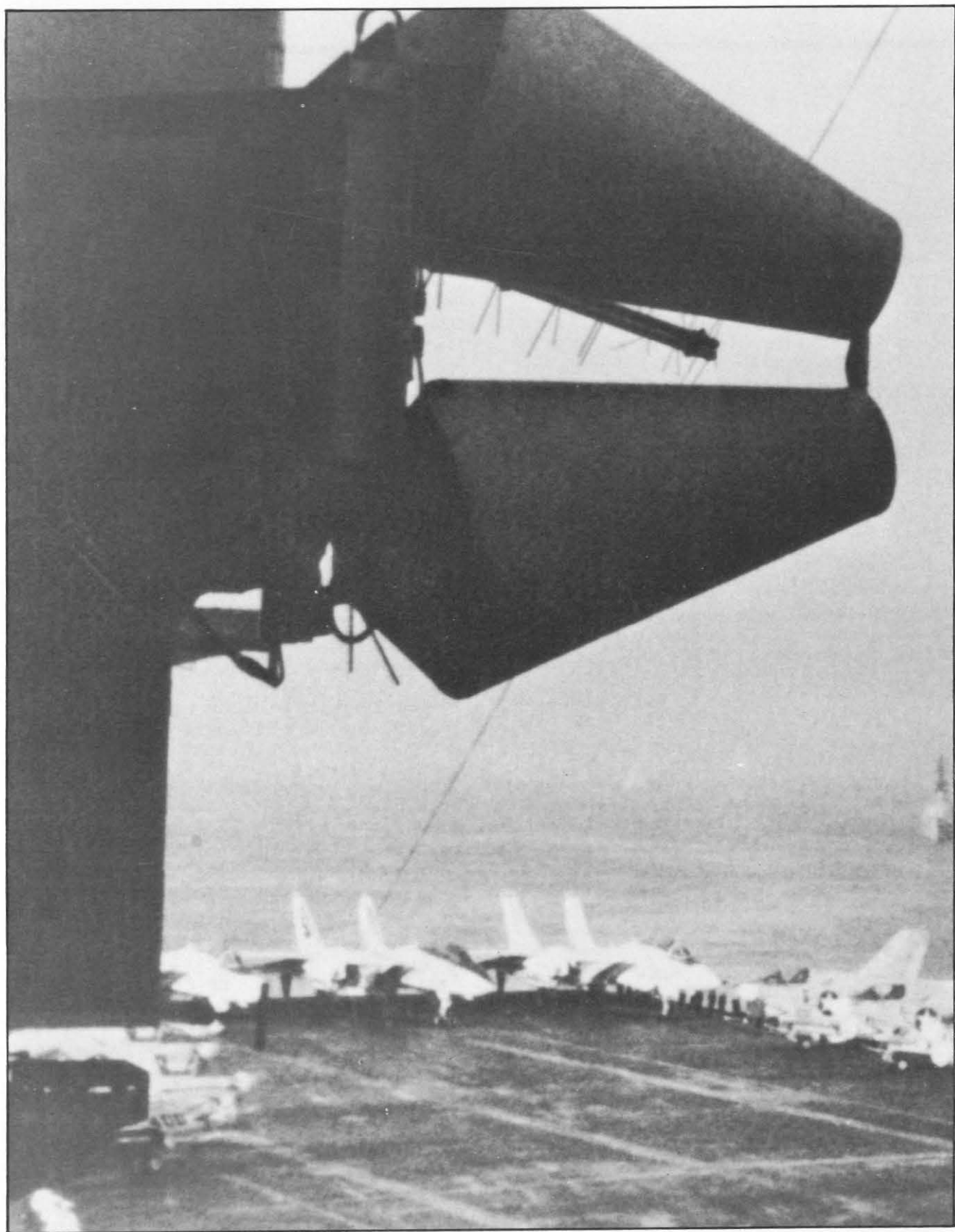
The course will review core knowledge and highlight recent advances in the basic disciplines of general preventive medicine and occupational medicine. Participants are expected to improve their performance on Parts I and II of the certifying examination of the American Board of Preventive Medicine. Each participant will receive a packet of pre-conference study materials. Optional problem-solving workshops will be available in the evenings. The course is certified for 32 credit hours in Category I. Tuition for the course will be \$225 (luncheons included) for attending physicians and \$125 for members of the American College of Preventive Medicine, resident physicians, nurses, or two-day-only (preventive medicine or occupational medicine) participants.

For further information write to: Review Course Coordinator, Division of Occupational Medicine, Cook County Hospital 720 S. Wolcott, Chicago, Ill. 60612. Telephone (312) 633-5310.

**Fellowships in infectious diseases . . .** The Infectious Diseases Division, Department of Medicine, National Naval Medical Center, Bethesda, invites applications for fellowships in infectious diseases.

The two-year program will consist of clinical, laboratory, and research experiences in all fields of infectious disease, including tropical infectious diseases, and meets the requirements for the American Board of Internal Medicine examination in infectious diseases. The candidate may emphasize tropical medicine, with part of the training including a didactic course at Walter Reed Army Institute of Research and an experience at Gorgas Memorial Laboratory in Panama. Other clinical research may be arranged pending available resources.

Candidates must have completed 36 months of post-graduate clinical training in internal medicine. For further information contact the Chairman, Department of Medicine, National Naval Medical Center, Bethesda, Md. 20014.



# ACDUTRA Option: Orientation at Sea

ENS William M. Roberts, MC, USNR

"Now set the special sea and anchor detail."

It was to these words, authoritatively transmitted over the ship's public address system, that I awakened in the gray dawn on 10 June 1977. I clambered down from my upper bunk, hastily donning my work khakis and making my way topside to view our departure from Pier 12 at the Norfolk Naval Station.

I was one of four Medical Corps subsidy program students (1975 program) who had opted for an at-sea orientation cruise as our annual 45-day ACDUTRA period for FY 1977. We had gathered in Norfolk on the last day of May from diverse locations (Stan Napierkowski from Philadelphia, Jeff Krebs from Missouri, David Sneed from Texas, and I from Washington, D.C.), and had reported to CINCLANTFLT. There we were informed that we would be assigned to the USS *America* (CV-66) soon to depart for the South Atlantic—destination: Rio de Janeiro, Brazil.

Our excitement as we came aboard the huge carrier—close to a quarter of a mile in length, 18 decks tall, and home for nearly 5,000 men and 100 aircraft—cannot be described.

A bit of mystery, and then gnawing apprehension, set in as we were

repeatedly asked if we had ever "crossed The Line." Stan was at ease with his affirmative response, but the rest of us, upon answering no, were greeted with knowing grins. Only later were we to find out what lay in store for those whose previous travels had not included a transequatorial passage.

Our carrier, the *America*, was one of five ships in a task force that also included the guided missile cruiser *South Carolina*; the oiler *Neosho*; and two destroyers, the *Dupont* and the *Ricketts*. The purpose of the task force visit to Brazil was to serve as a show of U.S. friendship, immediately following First Lady Rosalynn Carter's South American tour. During the course of the cruise, maneuvers with Brazilian aviators (whose single carrier was undergoing repairs) would take place.

The four of us had been assigned a shipboard line advisor, and—once settled down after the initial excitement and confusion of getting under way—we began to follow a rotational schedule designed to acquaint each of us with the operation of an aircraft carrier at sea. We were given briefings in various departments of the ship: Intelligence, Weapons, Engineering, Aviation, and Navigation, to name but a few. In addition, each of us stood watches on the navigation bridge, from which the movement and

course of the ship are controlled; in PRIFLY, the aviation "control tower"; and below, in the ever-darkened surface and air surveillance control centers.

The navigation bridge and PRIFLY, both located high above the flight deck and the ocean, afforded incredible views of the sea dotted with vessels for miles around—and of the fascinating and intricate flight operations originating and terminating on the deck below. One unique experience for us was firsthand observation of at-sea refueling, an immensely complicated and precarious maneuver refined to perfection by the U.S. Navy.

Of obviously great interest to the four of us was the Medical Department, staffed by four doctors (a senior medical officer, a surgeon, and two flight surgeons), a Medical Service Corps officer, and approximately 30 corpsmen (including three chiefs). The department had a 30-bed ward, a four-bed isolation ward, an emergency room, an operating room, a laboratory, an X-ray unit (with the capability for contrast studies, such as the IVP), and a pharmacy.

When not otherwise occupied, we

**The USS *America* enters Guanabara Bay.**

ENS Roberts is a fourth-year Navy scholarship student at The George Washington University School of Medicine in Washington, D.C. He will be starting his GME-1 year in basic surgery next July at NRMCMC San Diego.

were encouraged to involve ourselves in the operation of the department. Helping out with morning sick call (at which, frequently, more than a hundred men would present themselves in a single morning) and working in the E.R. gave us an excellent primary-care exposure and introduced us to some of the peculiar occupational hazards encountered in life at sea: heat rashes suffered by men who worked in the intensely hot environment of Engineering; low back pain and other orthopedic complaints, often resulting from repeated climbs and descents on the steel ladders connecting the innumerable decks of the ship; cellulitis and other infections, certainly in large part a product of the crowded living conditions; respiratory infections, which threatened to ground the aviators who contracted them; lacerations and soft-tissue injuries incurred in accidents; and the ever-present emotional problems of men away from family and other loved ones.

As novel and engrossing as our shipboard activities were, it soon became impossible to contain our excitement—and, yes, apprehension—as the day of our initiation drew near. Florid rumors of the atrocities we would encounter as we crossed The Line were rampant, and the malaise experienced by the great majority of the ship's company (less than 10% of whom had previously traversed the equator, thereby qualifying as "shellbacks") grew as the shellbacks held secret gatherings in preparation for our initiation.

Reveille was at 0530 as Davy Jones and King Neptune and his Royal Court came aboard. The skull-and-crossbones was raised high above the ship, and we lowly "pollywogs," clad in T-shirts and castaway trousers, were hustled off to a segregated breakfast of horrid green eggs. Then, department by department, we were called to initiation. Each group assembled in the hangar bay, to be greeted by evil-looking shellbacks dressed and made up as Barbary pirates. Coaxed

by the rattans wielded by our tormentors, we were immediately commanded to begin a very protracted duck-walk out onto one of the large aircraft elevators. Clenched tightly between the teeth of each of us was the crucial summons detailing alleged "crimes" against the Royal Court.

In the bright sunshine out on the elevator, we were suddenly drenched by a downpour from powerful hoses aimed at us from the flight deck above. Still crouching on the elevator, we were transported slowly to the flight deck, where a terrifying sight greeted us: innumerable "pirates," sporting wicked grins, awaiting our passage through their gauntlet. Each "stop" along our duck-walk path was worse than its predecessor: the double line of whip-wielding shellbacks by whom we had to crawl; the garbage chute through which we slithered; the Royal Dentist, who cheerfully irrigated our mouths with the foulest imaginable concoction; the Royal Barber, who threatened to scalp us and did perform an occa-

sional uncomplimentary coiffure on various "special cases"; the Royal Court, at which we were each tried for our heinous crimes; the Royal Baby, in whose ample belly, smeared with kitchen grease, we were compelled to bury our heads.

Finally, there was a welcome seawater shower, and then the inevitable interrogation: "What are you?" Failure to respond "Shellback!" loudly enough compelled the offender to pass through the entire ordeal again. Several hours and several thousand initiations later, the good ship *America* had got rid of its pollywog vermin: we were all deemed worthy to be numbered among the distinguished shellback order—as was attested later by a truly handsome diploma and wallet certificate.

Thus cleansed, the *America* plowed southward toward her first destination: Salvador, Brazil. Flight operations continued day and night, and I never ceased to marvel at the complexity and beauty of the events taking place on and over the flight deck, as well as at the precision,



Initiation rites for first-time crossers of "The Line" were fiendish and ingenious.





Flight operations were not the least of the cruise's fascinations.

skill, and daring of the pilots and shipboard personnel. We medical students were given the opportunity—of which we hastily availed ourselves—to ride in one of the prop planes, the C.O.D. ("Carrier-On-Delivery") aircraft. The thrill of the deck run or catapult launch—not to mention the landing and abrupt deceleration, courtesy of powerful arresting cables—will always be with me. High in the blue sky, gazing upon the tranquil waters of the South Atlantic and the tiny ships that made up our task force below, I experienced a sense of euphoria unmatched in the reality of my other new encounters.

The day prior to the *America's* arrival in Salvador, I once again boarded the C.O.D., and we headed for the Brazilian city as part of an "advance guard." We thus had a chance to explore this capital of Bahia before the invasion of several thousand Americans: the quaint old fishing harbor; the beautiful, uncrowded, coconut-tree-fringed beaches; the old city built into a rocky crag; the excellent and rea-

sonably priced restaurants; and the famous Mercado Modelo, where innumerable merchants sold every imaginable product from wood carvings to leather goods to *batida*, a delicious Brazilian beverage available in myriad fruit flavors.

Members of the Brazilian naval air wing, including a Brazilian flight surgeon, boarded the *America* to share with us the short journey down to Rio de Janeiro. En route, we participated in joint flight operations and thoroughly enjoyed getting to know our South American counterparts.

June 28 dawned cloudlessly, and I was up early on deck to anticipate our arrival in Rio.

Our five ships were an imposing sight with their crews manning the rails. Following a 21-gun salute, we dropped anchor, and I could hardly contain myself as I waited for one of the ship's boats to ferry me ashore for the start of seven memorable days in one of the truly great cities of the world.

Our spellbinding cablecar ride to the summit of Sugarloaf Mountain;

an erratic taxi excursion up a steep, hairpin-curve trail to the Corcovado, with a breathtaking vista of all of Rio at sunset (followed by a hair-raising ride down, during which our driver refused to employ his brakes); a crazy soccer game between Brazil and France at the world's largest stadium, whose playing field is surrounded by a moat to prevent irate fans from adjudicating the contest; delicious meals every night at bargain prices; exciting and novel nightlife; shopping for gems from some of the world's most beautiful selections; jogging the length of the Copacabana at dawn—these and countless other memories mean Rio to me.

Additionally, while we were in port an occasional night in the Emergency Room gave us a first-hand exposure to the vast array of minor emergencies commonly suffered by men on liberty.

The day following a patriotic Fourth of July celebration in Guanabara Bay—with the entire crew fondly treasuring memories of a great liberty port—we set sail for home, not stopping along the way, but passing within easy view of the lovely Caribbean islands of Barbados, St. Lucia, and Martinique.

Our shipboard orientation cruise terminated with our arrival back in Norfolk's 99° heat (the equator had been far cooler), but recollections of my experiences will long be with me.

The opportunity to see the "real" Navy at work, to participate in some small way in a major U.S. diplomatic mission, to see and enjoy new parts of the world, and to work in the Medical Corps of the operational Navy was of great value and fascination to me.

I shall never forget the novelty and thrill of a visit to a foreign port; the excitement of carrier flight operations; the beauty and tranquility of a sunset at sea. I truly hope that other scholarship students will avail themselves of this unique ACDU-TRA option and will thus be able to enjoy some of the experiences that so enthralled me.

# Instructions & Directives

## Smoking in BUMED command activities

The Surgeon General of the United States has determined that smoking is a hazard to health. The World Health Organization has suggested that the control of cigarette smoking could do more to improve health and prolong life in developed countries than any other single action in the field of preventive medicine.

Today there can be no reasonable doubt that smoking is harmful—both to the smoker and to those who are exposed to the smoke.

**Policy.** It is the policy of the Surgeon General of the Navy that Medical Department personnel, as health care professionals, should lead the way in encouraging programs and procedures that will decrease smoking. The following measures are designed to preserve the right of an individual to smoke as long as a reasonably contaminant-free environment can be maintained for nonsmokers.

- Nonpatient care areas. Smoking shall be prohibited in elevators, shuttle vehicles, auditoriums, conference rooms, and classrooms. Prompt action shall be taken to post No Smoking signs in these areas. Ashtrays shall be removed from auditoriums, conference rooms, and classrooms, and receptacles shall be placed just outside the doors so that individuals may dispose of cigarettes, etc., when they become aware of the smoking restriction.

No-smoking areas will be established in eating facilities.

Smoking may be permitted in private (nonpatient treatment) offices, staff lounges, and other specifically designated areas.

In common work areas shared by smokers and nonsmokers, smoking shall be permitted only if ventilation is adequate to remove smoke from the work area and provide a healthful environment. Work space may be planned to accommodate the preferences of each group, provided that efficiency of work units will not be impaired and additional space or costly alterations will not be required.

- Patient care areas. Since tobacco smoke itself is a health hazard, smoking shall be strictly controlled in patient care areas.

Smoking by nonpatient personnel in patient care areas shall be prohibited. Navy health care personnel who smoke in front of their patients are derelict in their ethical duties to those patients.

Ambulatory patients shall not be permitted to smoke in bed. They shall use smoking areas specifically designated for them.

Patients confined to bed should be discouraged from smoking.

Unsupervised smoking by patients classified as not mentally or physically responsible for their actions—including patients so affected by medications—shall be prohibited.

**Education.** Emphasis should be placed on educational programs encouraging smokers not to adversely affect their own well-being and that of others. In particular, these programs should focus on high-risk personnel, such as those with chronic bronchitis, emphysema, asthma, and coronary heart disease, and upon special occupational groups, such as asbestos workers. Programs should include lectures, available films, pamphlets, and posters, and should be updated frequently with the latest available medical research information on smoking and health.

**Action.** BUMED command activities shall ensure adherence to the measures set forth in "Policy" above. Commanding officers of medical treatment facilities shall further implement the policies stated in this instruction as necessary to ensure that smoking is controlled in a manner that best serves the interests of patient care treatment.—BUMED Instruction 6200.10 of 19 Sept 1978.

## Disaster control drills

The JCAH Accreditation Manual for Hospitals requires that each hospital or medical center exercise its external disaster plan at least twice a year, and its internal disaster, fire, and

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evacuation drills at least quarterly for each work shift (a minimum of 12 drills a year). BUMEDINST 3440.7 requires that a semiannual report be made, documenting that the JCAH requirements have been met.

Recent JCAH survey reports continue to cite hospitals and medical centers for not totally meeting JCAH requirements for conducting disaster drills. Also, the reporting requirements set forth in BUMEDINST 3440.7 have not been met by a number of hospitals and medical centers.

BUMEDINST 3440.7 requires that semiannual reports be submitted to arrive at BUMED no later than 15 May and 15 November, covering the six-month period 1 November through 30 April and 1 May through 31 October, respectively. Reports have arrived up to three months late and have covered periods other than those prescribed. Also, a number of hospitals and medical centers have failed to conduct the one external disaster drill and six internal drills required during each six-month period.

Naval medical facilities will ensure strict, continuous compliance with JCAH standards and BUMEDINST 3440.7 in conducting and reporting external and internal disaster control drills. Full documentation of these drills shall be maintained by each facility for review by JCAH survey teams; the Inspector General, Medical; and other authority.—BUMED Notice 3440 of 28 Sept 1978.

## **Aural rehabilitation**

NRMC Portsmouth, Va., and NRMC Oakland, Calif., are hereby designated as audiology and speech centers and as the principal treatment facilities for aural rehabilitation within the Medical Department. They shall provide a full range of professional services, including diagnosis; prescription; issue, repair, and maintenance of hearing aids; a complete program of aural rehabilitation; and the preparation of medical boards when indicated.

Other regional medical centers or naval hospitals that have the requisite staff and equipment may prescribe and issue hearing aids in those uncomplicated cases that do not require aural rehabilitation and are within the capabilities of the command. The terms "requisite staff" and "capabilities" shall be construed to include a fully trained or board-certified otolaryngologist, a fully trained audiologist, and audiometric equipment that is properly maintained and calibrated and capable of being used for recorded and live voice testing of speech reception and discrimination through both earphones and free field speakers, as well as pure tone testing facilities.

Section IV of enclosure (2) to DOD Directive 1332.18 (enclosure (1) to reference (a)) states in part that when unaided hearing loss in the better ear is 30 decibels or more in the normal speech range (pure tone audiometric values in the 500, 1000, 2,000 cycles per second), the individual will be evaluated at an audiology and speech center. Under these circumstances, all active-duty members whose primary diagnosis is hearing loss and whose fitness for continued duty becomes questionable shall be referred to the nearest naval hospital or medical center with the capabilities described above.

Eligibility for hearing aids, as stated in BUMEDINST 6320.31A, remains unchanged. Service provided to those eligible is expanded to include:

- Issue of a second hearing aid to personnel being transferred overseas, or in critical assignments.
- Provision of replacement batteries, as required, by all naval medical treatment facilities.
- Complete maintenance and repair services, to be provided through NRMC Portsmouth, Va., and NRMC Oakland, Calif.

Hearing aids shall be procured through the Veterans Administration, except in an emergency or in unusual circumstances. Current item listings, price lists, and purchase procedures may be obtained from: VA Marketing Center (134J) (MC-3), P.O. Box 76, Hines, Ill. 60141; telephone (312) 681-6795.—BUMED Instruction 6320.41B of 9 June 1978.

# The Move to Micrographics

## Why postpone the inevitable?

LT Patrick A. Shannon, MSC, USN

**T**he national economy is under pressure, and it follows that we in medical administration are also. We are faced with the necessity of increasing our efficiency if we are to survive. It is a time for intensive activity to improve the effectiveness of our operations (1).

The bureaucracy of which we are all a part is engulfing us with countless tons of paperwork, and the mountain of paper grows larger each year, despite our efforts toward "increased efficiency."

As more and more people demand access to more and more information, we must maintain data storage resources adequate to meet national security and legal requirements. To further complicate the problem, the vast amount of paperwork generated by our society today is causing grave doubts about con-

tinuing availability of natural resources (1).

Kalthoff (2) described the situation this way:

We are, by any measure, a generation of compulsive information magpies. File cabinets have spawned like rodents in spite of their heralded demise once the computer was to have become a force in our lives. We all understand the file folder. Very little is ever taken out of it. All kinds of things, sensible and insensible, are added to it. Did you ever open a file and find three copies of the same item . . . again and again? That is totally human. When in doubt, add more. When the folder is not findable, start a new one. When the file drawer fills, start another. When the cabinet fills, another. When the office fills, start moving them into the hall, the closet, the cellar and ultimately into the warehouse.

"Small wonder," he added, "that micromedia is gaining an increasingly sentinel role in the management of document based systems."

**T**hrough the use of micrographics we can combine the science, the art, and the technology by which much of our self-created dilemma can be reduced to the

medium of microforms, stored conveniently and then easily retrieved for reference.

The use of micrographics promotes efficiency, speed, and economy. Microforms require only a few square feet of storage space to replace the original documents that previously occupied a few thousand square feet. Further, they can be retrieved, displayed, and reproduced in seconds, for just pennies a copy (3).

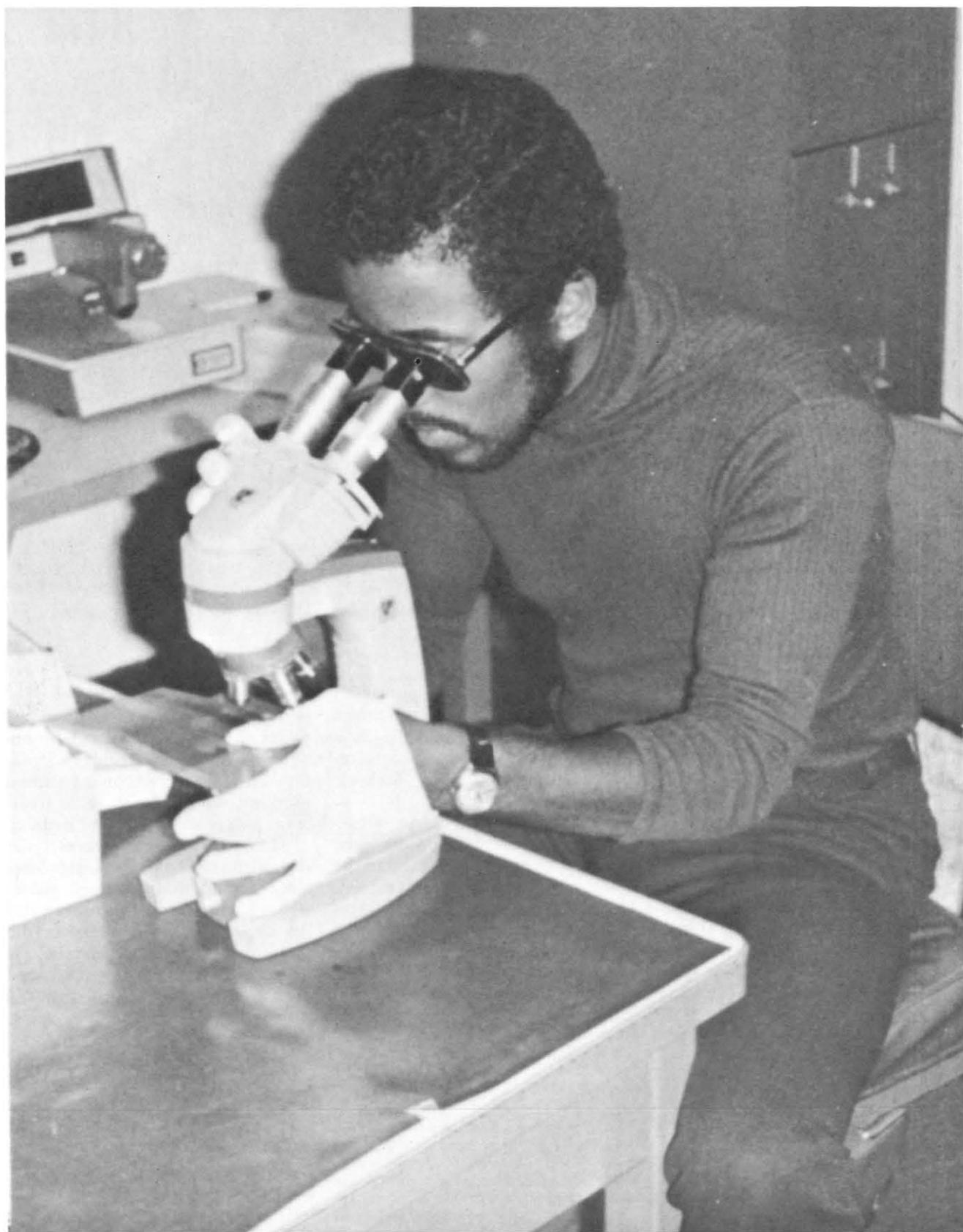
But space-saving is not the only dividend. The seemingly insignificant postage expense of a major medical center is, in reality, enormous; it increases annually and eats away at budgets. This expense can be reduced dramatically by the use of microforms. With microfilm, for example, we can airmail for 15 cents, from coast to coast, the same information that would cost nearly \$7 to mail in its original form.

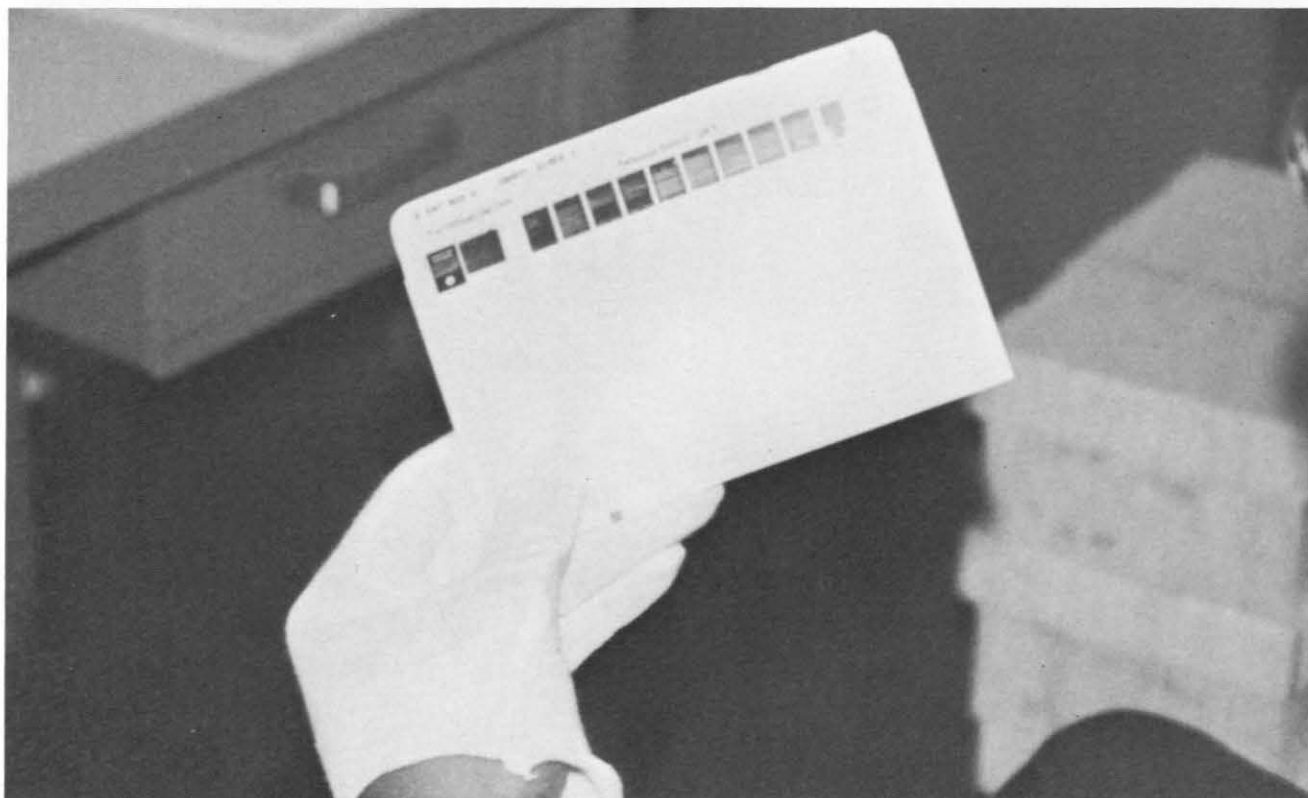
Moreover, the archival quality of microfilm can bring an end to the

**A microforms quality control technician checks a microfiche for resolution (clarity), density (image darkness), and general legibility before the original paper record is disposed of.**

LT Shannon is the training officer, Naval Reserve Division, Bureau of Medicine and Surgery (Code 362), Washington, D.C. 20372. Before arriving for duty at BUMED in June 1978, he was assistant chief, Patient Records and Tissue Repository Department, Armed Forces Institute of Pathology, Washington, D.C. He was also the technical program manager for AFIP's Microform Document Information System.







This single microfiche contains a 12-page medical record. It could accommodate up to 98 pages.

age-old problem of dog-eared and frayed paper copies that are the rule in most medical records (3).

Still other major advantages of microforms are improved integrity of files, increased speed of service, and reduced labor. And each of these advantages can be translated into cost savings.

An example of savings through file integrity can easily be seen in a situation where the activity of the file being used is considered to be heavy—as in the record office of a major medical facility. The improved integrity offered through micrographics will lower costs attributable to loss or misfiling of originals, and the resulting savings can justify any added costs the new system may incur over the old. The term “file integrity” in this instance refers not to security but, rather, to keeping the file in good order by never removing the master copy from the file room for tempo-

rary lending. Any working copies that are needed can be reproduced in the file room in seconds, as a screen image, a duplicate microform, or an enlarged “back to paper” print (1).

A typical situation in an outpatient record office might be this: The outpatient comes directly to the office, where he requests his record. The record (master microform) is pulled and copied, the duplicate is issued to the patient, and the master is placed in a suspense file. The patient then goes to his clinic, checks in for his appointment, and is seen by a practitioner. By inserting the microfiche\* in a viewer,

the practitioner can review the patient's entire record—up to 98 pages on one 4” X 6” fiche—to update himself on the patient's situation. He then records on a standard form any medication or other treatment he prescribes for the patient.

After the patient leaves, the microfiche and the standard form are returned to the record office, where (1) the fiche is destroyed, (2) the standard form is added to the master microform to update it, (3) the standard form is destroyed, and (4) the master is returned to the active files. Any laboratory tests, consultation reports, X-ray reports, and the like that are received by the record office at a later date would be added to the master microfiche in the same manner.

There are, of course, several possible variations to the routine just described—e.g., delivering the microfiche copy to the appropriate clinic the night before the patient's

\*A microfiche is a single sheet of microfilm containing multiple microimages (98 images at a reduction ratio of 24:1) in a grid pattern. These are updatable and erasable in the present state of the art. This microform appears to be the natural choice for individual medical records.

appointment, thus eliminating most of the initial record retrieval the patient must go through.

Costigan (1) writes: "It is easy to see how this will, in turn, increase the speed of service by minimizing the waiting time that might otherwise have resulted from a document's being temporarily out-of-file or its having been transferred to less accessible storage.

"Micrographics saves labor in several ways," he adds, "but two factors predominate: (1) the reduction in sheer bulk afforded by miniaturization of records, and thus a reduction in search and handling effort, and (2) the relative ease with which micrographic systems lend themselves to automation."

Microfiche file systems that are completely random are now available. These use coded jackets for the microfilm and enable the system operator to pull and file records completely at random, simply by using a numbered keyboard. Such a system could enable an outpatient record office to cut its manpower requirements drastically.

The entire process of record search, retrieval, and return to file is done automatically at a keyboard,



With this reader-printer, the operator can view a microform and produce a "back to paper" copy.



This wet-process copier will duplicate a microfiche in seconds, for just pennies a copy.

through the use of the patient's accession number (Social Security number). After the number is entered in the system, the proper microfiche is automatically ejected in seconds. The record is then copied, the copy issued, and the master returned to file automatically and completely at random—again in just seconds. Granted, the system is expensive, but for a large operation it is a cost-saving one.

Cost-effectiveness studies could be utilized to justify this kind of system for smaller activities; otherwise, a standard manual filing system should be used. In considering the cost effectiveness of a system, we must not forget that speed of service and the other major advantages of using microforms will be inherent in it also.

**M**icroforms can also be used for miniaturization of X-ray films. (The U.S. Army is currently evaluating X-ray miniaturization at Eisenhower Medical Center, Fort Gordon, Ga.) In August 1976, I conducted an informal survey relating to this possibility, through a ques-

tionnaire sent to major and some minor naval medical facilities, both afloat and ashore. I based my questions on knowledge I had acquired while attending a course in micrographics at the 3M Technical Training Center, St. Paul, Minn., and on discussions with the Radiology Department at the Armed Forces Institute of Pathology (AFIP).

Twenty-two responses were received from the major naval medical facilities. Individuals responding to the survey ranged from those with titles unknown to chiefs of radiology. Annual numbers of films processed ranged from 800 to 968,000. Films on file at the various facilities ranged in number from .012 million to 5.5 million, with one facility reporting the number "unknown."

Asked whether their facilities were involved in the silver recovery program, three respondents replied no and all others reported yes. Twelve of the radiology services reported that they did not need the extra space miniaturization could provide; nine said they could use the space; one did not answer the question. Not surprisingly, some

facilities said they neither wanted nor needed automation or miniaturization.

Because of the informal nature of the survey, its value is not only limited but questionable. However, surveys of this type can provide interesting and valuable insights if interpreted for what they really are. Random polls and "off the cuff" surveys are the yardsticks that professional pollsters use most often.

In discussions with the AFIP radiologists, it was determined that the smallest roentgenogram they would accept would be the 105 mm. This is the same size as a standard microfiche film (4" X 6").

Systems are available that will copy a 14" X 17" X-ray film and reduce it to a very handy 35-mm regular photographic slide in less than 10 seconds—this, according to the manufacturer, without any loss of resolution. (Resolution is the ability of optical systems and photographic materials to make fine details of an object visible.) But the AFIP radiologists felt that a 35-mm slide would be "too small" and "too easy to lose." Their main fear, however, was that there would always be a doubt as to whether everything that was on the original film would also appear on the miniaturized copy or a subsequent enlargement—and, indeed, as to whether artifacts (lines, marks, etc.) might be added somewhere along the line.

Keeping in mind that all these opinions are valid to the individual, one must also remember that the mass chest X-ray programs of the past, both public health and military, were carried out by radiologists reading a roll of developed 80-mm film with a high degree of reliability and success. Moreover, some large civilian institutions, such as Holy Cross Hospital in Metropolitan Washington, D.C., are currently solving their X-ray film storage problems through the use of miniaturized films, which attests to a certain degree of user confidence.

In any case, the reduction of a standard-size X-ray film (14" X 17") to a more manageable pocket



Each of these commonly used rotary files—10' X 8' X 4'—can hold up to 200,000 medical records or X-ray films on 4" X 6" microforms.

size of 4" X 6" (105 mm) would not only save considerable space but would also allow duplicates of roentgenograms to be filed in the patient's medical record.

The X-ray film would conceivably be miniaturized after the radiologist had made his initial report on the full-size roentgenogram. The miniature would be used for storage, both active and archival, and would still be completely readable. An added advantage of this system is that while we would be saving money in the storage, handling, mailing, etc., of miniatures, the silver reclaimed from the standard-size X-ray films could help offset the initial outlay for miniaturization.

One thousand 14" X 17" X-ray films contain 35 troy ounces of silver. During processing, 27 ounces are transferred to the fixative and 7 ounces remain on the film (4). (The remaining ounce is lost among the developer, the wash, and the fixative.) If we use as an example a radiology service of a large naval regional medical center that would process some 300,000 films per year

—and that would have some three quarters of a million films on active file and an equal number in archival storage—it should be clear that a good deal of money could be saved through silver reclamation. The NRMC in question should produce about 10,500 troy ounces of silver reclaimed from X-ray films in its active and archival files. Because the price of precious metals is constantly fluctuating, I shall not attempt to arrive at a monetary figure for that amount of silver, but it would be sizable.

Thus far, I have touched on just two possible uses of microforms in medical facilities. They could also be used for:

- in-patient records;
- archival storage;
- prescription files for the pharmacy (coded roll microfilm is best here), with automatic search capability;
- financial and materiel-management records;
- personnel records. (The Army is now microfilming personnel rec-



ords in its RAM II project (5), an updatable system that is front-ended by a minicomputer and has random file and retrieval capabilities. The Navy is also converting its personnel records to microforms.)

The list of potential uses could go on and on, and is limited only by one's imagination.

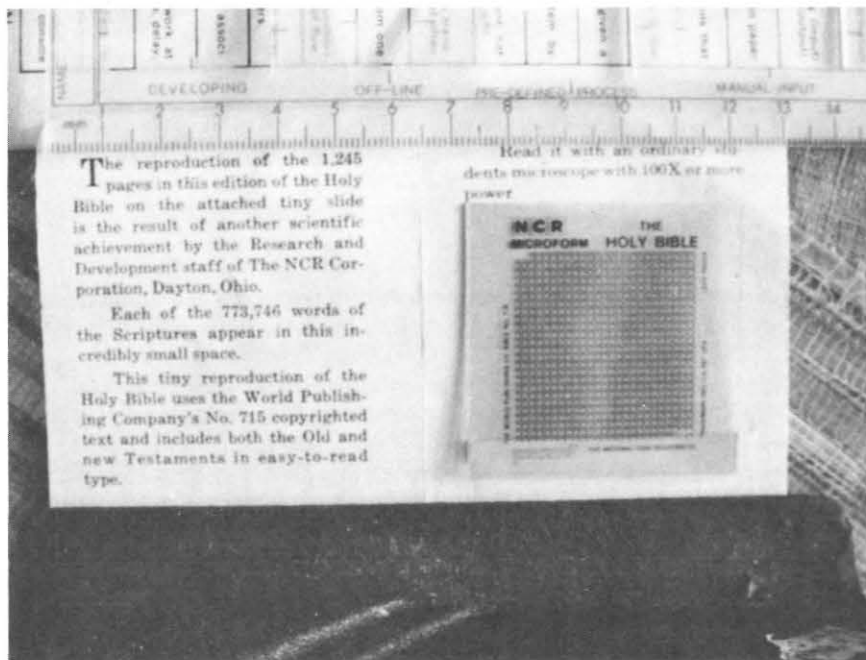
The Armed Forces Institute of Pathology currently has a \$1.8 million contract with a civilian vendor to transfer to microfiche some 1.3 million accessioned cases—one of the largest microfilm efforts ever attempted. When the current two-year contract expires, the AFIP will either microfilm records (which average 10 pages each) as they are accessioned from contributors (about 200 per day) or contract the work out on a yearly basis.

Unless competent micrographics personnel are readily available, any facility considering the move to microfilm should do so only under contract; an in-house effort without expertise will surely result in disaster.

New facilities should begin minia-



**To use this reader-printer with automatic search capability, the operator keys in an identifying number (e.g., patient accession number, prescription number, etc.). The machine selects the appropriate record from a microfilm roll. (Each film cartridge holds up to 6,000 pages.)**



Called "ultrafiche," this 5-sq-mm microform contains both the Old and the New Testaments and must be read with a 100X microscope. Impractical for normal use, it's nevertheless an excellent example of industry capability.

turization as soon as they open for business. Needless to say, highly trained and qualified personnel should be consulted before such a program is established, since chances of program disaster and financial loss are greatly increased without such consultation.

Along these same lines, if individual efforts are made to microfilm records, qualified trained personnel should be utilized *on board* to ensure that proper quality control is established and maintained, lest the film become unreadable with age. Obviously, this could have far-reaching legal and storage implications.

Military Specification MIL-M-38748A of 1 Dec 1970 outlines the specifications for microfiche and should be adhered to rigidly. Other MIL-specs in print cover lot-sampling sizes and other pertinent data needed to ensure that microfilm will meet federal archival standards and that the facility is getting what it pays for.

Finally, many publications, much information, and expert assistance are available from the National Micrographics Association, 8728 Colesville Rd., Silver Spring, Md. 20910.

To summarize, there are no obstacles that cannot be or have not already been overcome in relation to microfilming of medical records.

The microform is an idea whose time has come. It is inevitable.

Why not begin now?

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# ACHA Admits New MSC Members

Forty-one Navy Medical Service Corps officers have been accepted to nomineehip in the American College of Hospital Administrators (ACHA), and three have been advanced to membership in that Chicago-based professional society. Their admission took place at ACHA's recent 44th Annual Meeting, held concurrently with the Annual Meeting of the American Hospital Association.

In their new affiliation, these officers join a personal membership organization composed of more than 14,000 leading chief executive officers and their administrative colleagues, serving hospitals and health service facilities in the United States, Canada, and other countries.

The ACHA was founded in 1933 to assure high standards of competency in hospital and health service management. To do so, it conducts a comprehensive educational program directed toward improvement of all facets of administration. In addition, it publishes the major professional journal serving the broad health service field—*Hospital and Health Services Administration*—and regularly issues monographs on challenging issues relating to health care delivery.

Membership in ACHA is divided into three categories: nominee, member, and fellow. To advance in status, affiliates must qualify by passing stringent written and oral examinations.

MSC officers newly advanced to membership are:

LCDR Marshall S. Duny, MSC, USN  
LCDR Everette L. Wilson, MSC, USN  
LT David G. Daniel, MSC, USN

MSC officers newly admitted to nomineehip are:

CAPT Leslie J. Schaffner, MSC, USN  
CDR E.R. Christian, MSC, USN  
CDR Donald R. Craig, MSC, USN

CDR Frank D.R. Fisher, MSC, USN  
CDR Raymond B. Kessler, MSC, USN  
LCDR Wendell L. Chappell, MSC, USN  
LCDR John P. Kelly, MSC, USN  
LCDR James D. Knight, MSC, USN  
LCDR Sergei F. Pron, MSC, USN  
LCDR Edward A. Rice, Jr., MSC, USN  
LCDR Todd R. Stemple, MSC, USN  
LT Phillip J. Barnett, MSC, USN  
LT Earl Beatty, MSC, USN  
LT William H. Brent, MSC, USN  
LT John R. Buffington, MSC, USN  
LT Thomas Candelaria, MSC, USN  
LT Mark E. Celmer, MSC, USNR  
LT William H.G. Craig, MSC, USN  
LT Herald C. Edmond, Jr., MSC, USNR  
LT Frederick W. Ewing, MSC, USN  
LT Carmelo F. Fermin, MSC, USNR  
LT Harrison T. Ferris, MSC, USNR  
LT Louis O. Garcia, MSC, USNR  
LT William R. Gilchrist, MSC, USNR  
LT John R. Hetrick, MSC, USN  
LT William C. Johnson, MSC, USNR  
LT David H. Lardy, MSC, USNR  
LT Daniel R. Longo, MSC, USNR  
LT Michael E. Plante, MSC, USNR  
LT Randolph A. Redpath, MSC, USNR  
LT Bernard Shapiro, MSC, USNR  
LT Gary L. Stokes, MSC, USNR  
LT Lee W. Tompkins, MSC, USN  
LT Lawrence J. Walters, MSC, USN

LT Joseph A. Wassell, MSC, USNR  
LTJG Robert G. Chandler, MSC, USNR  
LTJG John F. Clark, Jr., MSC, USNR  
LTJG Jeffrey P. Harrison, MSC, USNR  
LTJG Tod N. Lambert, MSC, USNR  
LTJG Dale M. Nachreiner, MSC, USNR  
LTJG Thomas E. Payne, MSC, USNR

Other Navy affiliates of ACHA are:

## Nominees

CAPT Francis G. Anderson, Jr., MSC, USN  
CAPT Lewis E. Angelo, MSC, USN  
CAPT Robert C. Elliott, MC, USN  
CAPT Roy W. Tandy, MSC, USN  
CDR Lawrence L. Biesiadny, MSC, USN  
CDR Frederick F. Briand, MSC, USN  
CDR Richard L. Devault, MSC, USN  
CDR Walter A. Godfrey, MSC, USN  
CDR Arthur D. Hatten, Jr., MSC, USN  
CDR Jack E. Johns, MSC, USN  
CDR Bobby L. Stephens, MSC, USN  
CDR Thomas E. Thomas, MSC, USN  
LCDR David E. Anderson, MSC, USN  
LCDR Robert S. Kayler, MSC, USN  
LCDR William J. Lambert, MSC, USN  
LCDR Larry G. Lobaugh, MSC, USN  
LCDR Michael L. Mitchell, MSC, USN  
LCDR Leonard L. Moore, MSC, USN  
LCDR William P. McGrath, MSC, USN

## A NOTE FROM THE MSC CHIEF

The highest sense of professionalism is absolutely essential within the Medical Service Corps, as in all communities of the Navy Medical Department. Formal training and education, the requirements in many professional fields for certification or licensure, a code of ethics, and a special attitude by which to govern one's practice are all a part of being a professional.

So too, of course, are affiliation and active participation in the affairs of professional societies appropriate to one's field. Often in the military, officers neglect those societies, members of which are predominantly civilian professionals. This should not be. It is vital that we of the Armed Forces remain abreast of our professional colleagues in civil life, in part so that we may better serve the military and in part because we have something to offer them, as well.

The accompanying article, prepared by CAPT Victor Swindall (MSC) and CDR Charles Loar (MSC), acknowledges the importance of professional activity among those officers of the Medical Service Corps affiliated with the American College of Hospital Administrators. My personal congratulations go to all officers recently admitted to nomineehip or promoted to membership status, as to those previously so honored.

—CAPT Paul D. Nelson, MSC, USN

LCDR Reginald E. Newman, MSC, USN  
 LCDR Salvatore J. Profita, MSC, USN  
 LCDR Vernon P. Sandal, MSC, USN  
 LCDR James P. Smith, MSC, USN  
 LT Robert R. Ayers, MSC, USN  
 LT J. Thomas Benson, MSC, USN  
 LT Harry C. Coffee, MSC, USN  
 LT Kenneth D. Gibson, MSC, USN  
 LT Charles W. Hagen, MSC, USN  
 LT Russell D. Harbaugh, MSC, USN  
 LT Dean A. Herman, MSC, USN  
 LT Carl J. Hooton, MSC, USN  
 LT Jeffrey A. Kramer, MSC, USN  
 LT Carl C. Langston, Jr., MSC, USN  
 LT Patrick L. Mahin, MSC, USN  
 LT Edwin L. Makamson, MSC, USN  
 LT Joseph E. McBride, MSC, USN  
 LT Jimmy R. McCormick, MSC, USN

LT Kenneth R. Randle, MSC, USN  
 LT Thaddeus H. Sparkman, MSC, USN  
 LT John W. Stine, MSC, USN  
 LT Gary J. Spinks, MSC, USN  
 LT Frederick R. Tittman, MSC, USN  
 LTJG Marc V. Weiner, MSC, USN

#### Members

CAPT Eugene M. Bryant, MSC, USN  
 CAPT Hubert H. Sowers, MSC, USN  
 CAPT Victor A. Swindall, MSC, USN  
 CDR Robert K. Zentmyer, MSC, USN  
 LCDR William M. Buckley, MSC, USN  
 LCDR John B. Farnham, MSC, USN  
 LCDR David H. Fisher, MSC, USN  
 LCDR William L. Roach, MSC, USN  
 LCDR Douglas Shepherd, MSC, USN  
 LT Robert E. Elster, MSC, USN

#### Fellow

CDR Charles R. Loar, MSC, USN

Information regarding ACHA admission requirements may be obtained from the Director of Membership, American College of Hospital Administrators, 840 N. Lake Shore Dr., Chicago, Ill. 60611. Questions related to college participation may be directed to the Office of the Chief, Medical Service Corps, Bureau of Medicine and Surgery (Code 71), Department of the Navy, Washington, D.C. 20372.

## Letters

We were pleased to see, in the September 1978 issue of *U.S. Navy Medicine*, the article in the Scholar's Scuttlebutt section on "The Medical School Liaison Officer."

This article, identifies for Navy scholars their ombudsman on the local scene, and recognizes the fine work of the men who perform these duties—entirely, we might add, without pay.

Unfortunately, the list you printed does not represent the officers who were serving as MSLO at your press time, but only a partial list, with many inaccuracies . . . [S]everal outstanding officers who have been working as MSLO for years aren't even listed.

For that reason I would appreciate it if you would print this letter and indicate that the following are also Medical School Liaison Officers—those with the asterisk, for a long, long time.

Tufts: CAPT Eugene Laforet, MC, USNR (Ret.)\*; CAPT Oscar Donnefeld, MC, USNR-R

State University of New York (Stoneybrook): CAPT Stanley Wallach, MC, USNR-R; CAPT W.W. Shreeve, MC, USNR-R

State University of New York (Syracuse): CAPT Richard J. Blair, MC, USNR-R

Temple: CDR Alfred A. Bove, MC, USNR-R

Ohio State: CAPT Donald A. Senhauser, MC, USNR-R

Georgetown: CAPT John F. Kurtzke, MC, USNR-R

Howard: CDR Louis Ivey, MC, USNR-R

Eastern Virginia Medical School: CAPT Robert Brownson, MSC, USNR-R

University of Virginia (Charlottesville): CAPT John A. Owen, MC, USNR-R; CAPT Robert W. Cantrell, MC, USNR-R

Medical College of Georgia: CDR William T. Freeman, MC, USNR-R

Emory: CDR Kenneth A. Scheidt, MC, USNR-R

University of Miami: CDR Donald (not Ronald) J. Hagan, MC, USNR-R\*

University of Tennessee: CAPT Robert L. Summitt, MC, USNR-R\*; CAPT Daniel J. Scott; CAPT Ernest L. Cashion, MC, USNR-R

University of Mississippi: CDR Gordon D. Deraps, MC, USNR-R

Louisiana State (New Orleans): RADM Winston H. Weese, MC, USNR-R\*

University of Texas (Dallas): CDR Carl E. Renfro, MC, USNR-R

University of Chicago: CDR Morris D. Kerstein, MC, USNR-R

University of Wisconsin: CAPT George Kroncke, MC, USNR S2

University of Missouri (Columbia): CAPT Robert L. Blass, MC, USNR-R; CDR Carl G. Kardinal, MC, USNR-R

University of Missouri (Kansas City): CDR Robert B. McFarland, MC, USNR-R

St. Louis University: CDR Hendrik B. Barner, MC, USNR-R\*

University of Nebraska: CDR Alvin M. Earle, MSC, USNR-R

University of Arizona: CAPT Edward D. Waldmann, MC, USNR-R; LCDR Gary T. Tizard, MC, USNR-R

University of Utah: CDR Richard E. Kanner, MC, USNR S1

University of Nevada (and College of Osteopathic Medicine of the Pacific): CAPT Harry S. Hooper, USNR (Ret.)\*

Philadelphia College of Osteopathic Medicine: LCDR Ronald A. Kirschner, MC, USNR-R

M.H. Backer, Jr., RADM, MC, USNR  
 Director, Medical School Liaison  
 Officer Program

*We regret very much indeed that the information contained in this article was so outdated and we apologize to those Medical School Liaison Officers who were inadvertently omitted from our list.—Ed.*



# NAVMED Newsmakers

At 13, an age when many girls are fascinated by horses, **Marla Patterson** was captivated by aerial steeds. John Glenn had just become the first American to orbit the earth, she recalls, and "airplanes were exciting"—the next best thing to a space capsule.

Now a member of the Navy Nurse Corps, LT Patterson serves as an instructor at Hospital Corps School, Great Lakes, Ill. Off duty, she's also a teacher. As a certified flight instructor for single- and multi-engine aircraft and instrument flying, she introduces aspiring pilots to the intricacies of the world of flight.

A 15-year member of the Civil Air Patrol, LT Patterson used her last summer's leave to escort CAP cadets to Sweden, under the organization's International Air Cadet Exchange.



LT Patterson: a 'second career'



CAPT Bynum: scoring a 'first'

Flying is a "fascinating second career," says LT Patterson. In her off-duty hours, you're not likely to find her with feet on the ground.

In a recent ceremony at U.S. Naval Regional Medical Center Japan, CDR **Joan C. Bynum**, assistant director of nursing service, became the first black woman in the 203-year history of the Navy to attain the rank of captain. Her silver-eagle collar device was pinned on by CAPT B.L. Johnson, the medical center's commanding officer, who recalled that in June 1957 he and CAPT Bynum had shared another memorable occasion: their graduation from Meharry Medical College, when he received his degree in medicine and she was awarded a bachelor's degree in nursing.

At Naval Regional Medical Clinic New Orleans, La., eight petty officers—10% of the clinic's enlisted staff—have demonstrated their pride in naval service in the most foreful way possible: by reenlisting en masse, for a collective obligation of 38 more years. The reenlistees are: HM1 **Joseph W. Adams, Jr.**; HM1 **Tommy R. Carver**; IC1 **John O. Gregory**; HM1 **Darlene E. Pike**; HM2 **Ronald E. Dove**; HM2 **Daniel J. Walker**; HM2 **Donna V. Williams**; and HM3 **Rex A. Reade**.



Reenlistees: 38 more years



# First Regional Medical Record Meeting Held

**t**o improve communication among naval medical record personnel, the Bureau of Medicine and Surgery recently sponsored a two-day regional meeting of representatives from 11 naval hospitals in the eastern half of the country.

**Background.** Medical audit and utilization review have become a way of life at naval medical treatment facilities. Efficient implementation of these processes requires not only that the medical record be complete, but that the diagnostic and surgical codes—the keys to decision-making—accurately reflect the condition(s) for which the patient was treated.

At present, guidelines for coding medical diagnoses and surgical operations are contained in ICDA-8 (*International Classification of Diseases, Adapted for Use in the United States*) and in BUMEDINST 6300.3, Inpatient Data System.

At the Naval Medical Data Services Center (NMDSC), information from the field is subjected to a computer edit to eliminate impossible diagnoses—e.g., a female diagnosis for a male patient. In addition, the NMDSC medical record administrator has day-to-day contact with coding personnel in the various naval facilities. These contacts indicate, however, that there is some variation in interpretation of guidelines, and that not enough is being done in the area of cross-fertilization of ideas to improve accuracy and uniformity of diagnostic coding.

To attack these problems, NMDSC last spring recommended to the Surgeon General three courses of action: (1) organization of

regional meetings for medical record personnel; (2) issuance of a newsletter covering effective medical record procedures, solutions to complex coding problems, and new developments in the field; and (3) inclusion of medical record information in training courses for patient-affairs personnel.

These proposals have been approved by the Surgeon General. Thus far, informal coding memoranda have been circulated to medical record administrators in naval hospitals, and the first regional meeting was held 21-22 Sept 1978 in Bethesda, Md.

**Meeting.** The program—planned by Mrs. Muriel Brandford, RRA, of NMDSC—comprised presentations by representatives of NMDSC, the Bureau of Medicine and Surgery, the Naval School of Health Sciences, and the Veterans Administration; by medical record administrators from two large naval hospitals; and by the president of the Medical Record Association of the District of Columbia. Topics ranged from coding problems in the field to an introduction to ICD-9, newest version of the *International Classification of Diseases*.

Conclusions reached by meeting participants included the following:

- Hospitals should share medical audit criteria. BUMED should make available audit criteria to hospitals when requested.

- By means of a newsletter and future meetings, hospitals should share methods and procedures used in processing medical records.

- Better communication is needed between medical record

personnel and physicians filling out medical records. For example, when a physician records many diagnoses, is the first diagnosis mentioned the principal diagnosis for which the patient was treated?

- Physicians should be encouraged to record diagnoses rather than symptoms whenever possible.

- The complete medical record should be made available to medical record coders to improve the accuracy and completeness of data reported to NMDSC.

- The use of Hospital Corps personnel to code medical records is acceptable only if they are given training in performing this function and if they are to be assigned to this task for an extended period of time.

- NMDSC should make available to each hospital computer printouts showing length of stay, by diagnosis, for its patients and for patients in other hospitals with comparable bed size and mission.

**Future programs.** A questionnaire completed by participants at the meeting's conclusion indicated they felt such gatherings are very useful in communicating ideas and should be continued. Participants stated that future programs should devote more time to discussion of variation among hospitals in methods used to process medical records. But they singled out complex coding problems as the topic in most need of extensive discussion.

Plans for future meetings will depend on availability of funds. All participants expressed special interest in the presentation made by CAPT J.J. Quinn (MC), which follows this report.

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**'This conference is indicative of the Navy's increased interest in use of medical records as one of the means of evaluating delivery of medical care.'**

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## **Diagnostic Data: A Key to Decision-Making**

CAPT J.J. Quinn, MC, USN

**T**his is the first conference on medical records that the Bureau of Medicine and Surgery has sponsored, and it is indicative of the Navy's increased interest in use of medical records as one of the means of evaluating the delivery of medical care. Our Surgeon General, VADM Arentzen, is deeply interested in this conference—he was the one who approved it—and hopes that it will be a trailblazer for future get-togethers that will ensure continuing progress in the area of medical record management.

When we talk about a medical record, we are not merely referring to a sheaf of papers arranged in a folder and placed in a file. We are also referring to everyone who has an input into this record—doctors, nurses, laboratory personnel and, last but not least, medical record personnel. You are the last group to see the medical record, and you bear a heavy responsibility for seeing that the standards of accreditation with respect to medical records are met.

The manual of the Joint Commission on the Accreditation of Hospitals states: "A hospital shall maintain medical records that are documented accurately and in a timely manner, that are readily accessible, and that permit prompt retrieval of information including statistical data."

How do you accomplish this? In the same accreditation manual, there is a description of the role of medical record personnel in the hospital. As you are well aware, this role includes a variety of duties that not enough people realize are necessary. These duties involve supervision of data gathering, training of clerical personnel, screening medical records for completeness and compliance with established criteria, helping to design forms, suggesting to doctors and nurses how they can improve their entries in the medical records, assisting in medical staff review, and ensuring protection of the privacy of patients and physicians whose records are involved in quality-of-care activities.

So we see that the medical record administrators are required to be in touch with all professional services in the delivery of medical care. Medical record administrators also communicate—although indirectly—with Bureau of Medicine and Surgery program managers and with the special studies, such as medical audits, of which they are an integral part.

**I**n general, medical coding is a means of communication. To the extent that the coding is accurate and complete, one can receive a meaningful message.

We all know that the key to the medical record is the file number. The reason for selecting a record with a given file number is that the patient has some characteristic that is of interest, and this characteristic is summarized in a code. Thus, in the case of medical

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CAPT Quinn is Deputy Director of Program Planning and Analysis at the Bureau of Medicine and Surgery, Washington, D.C. 20372. This paper was presented at the Regional Medical Record Meeting, held 21-22 Sept 1978 at the Naval Medical Research Institute, National Naval Medical Center, Bethesda, Md.

audits, the diagnostic or surgical code is the first criterion we use in the selection of our cases, and the representativeness of the conclusions to be drawn depends primarily on these codes—assuming, of course, that the file numbers are correct.

For example, if we wish to conduct a medical audit for cases with myocardial infarction, we go to the diagnostic index and select those folders identified as listing myocardial infarction among the diagnoses on the cover sheet. If among those records pulled, we find an error in coding, we can always delete that case from the study. But what are we missing by not including that case that has been miscoded?

The miscoding has other ramifications. If the criterion for selection of a diagnosis for study is the number of cases, a systematic error in coding could result in erroneous selection or omission of a given condition.

I always wondered how accurate the coding of medical records was, and a report issued by the National Academy of Sciences in 1977—"The Reliability of Hospital Discharge Abstracts"—gave me an answer that really surprised me. This study, involving many hospitals, disclosed that the code for the principal diagnosis was correct in only 65% of the cases examined, and that the code for the principal procedure was correct in 73%. Not all the errors were due to coding. But in the case of the principal diagnosis almost half the errors were due to coding, and in the case of surgical operations two thirds of the errors were due to coding. Most of these errors were occasioned by routine and systematic misuse or misunderstanding of the coding system—e.g., using the alphabetical index but not the tabular listing and not reading inclusions.

I hope that the error rate in our naval hospitals is nowhere near as high as that in the Academy study, because we are using the diagnostic and surgical data for decision-making. At present in the Bureau we have a Quality Assurance Committee that tries to evaluate the quality of care given to patients in naval medical treatment facilities. It occurs to me that there should be a Quality Assurance Committee among medical record personnel to look into the area of quality coding.

**L**et me describe briefly some of the problems we are faced with in the Bureau, and some of the ways we use diagnostic and surgical data in our day-to-day decision-making.

As you know, we have, in the past two years, instituted medical holding companies. To determine whether the holding company is being used as intended, we have been reviewing the diagnoses of indi-

viduals sent to holding companies. Some of this information comes from dispatches for patients in the holding company 60 days or more, but much of the information comes from the computer that contains the diagnostic and surgical codes for these individuals.

We also need diagnostic and surgical data to help us estimate the number of physicians in various specialties who are needed in different hospitals. In a recent instance, we were looking into the number of neurosurgical operations, and the data we received from the Medical Data Services Center was very useful in helping us make decisions on the number of neurosurgeons needed in our hospital system.

Length of stay in naval hospitals is another area of great interest. The Office of Management and Budget and the General Accounting Office also make much use of this data. For your information, they are comparing length of stay in our naval hospitals with that in civilian hospitals. Thus you can see that it is most important for diagnoses to be coded correctly, so that we are able to compare like things.

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**‘ . . . you bear a heavy responsibility for seeing that the standards of accreditation with respect to medical records are met.’**

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In this connection, the necessary data for correct classification are most important. In making length-of-stay comparisons, cases are classified into four categories: single diagnosis without surgery; single diagnosis with surgery; multiple diagnoses without surgery; multiple diagnoses with surgery. The length of stay for complicated cases—those with more than one diagnosis—is higher than that for uncomplicated cases: those with one diagnosis. In addition, any case with surgery for a specific diagnosis remains for a longer period in a hospital than those without surgery. So you can see that if cases are incompletely coded, comparisons with civilian facilities will put the Navy at a disadvantage.

You may also be interested to know that each month the Surgeon General pays very close attention to the

length of stay of patients in each of our hospitals, and he is most persistent in seeing that excessive lengths of stay are reduced. As you know, the total length of stay in any hospital, for each type of beneficiary, depends on the diagnostic mix. Thus, for your individual hospital, if the cases are not classified correctly, the length of stay in most instances will appear higher than one would ordinarily expect.

This type of classification also is important in planning for a new hospital. After we know the population to be served, we must estimate the number of patients who will be admitted with various diagnoses, and we must estimate how many of these patients will have surgery. This is important not only in planning for hospitals, to see how many operating rooms might be required, but also in determining the needed types of medical specialists.

I hope I have given you enough examples of why the Bureau needs accurate and complete data from our medical records. Ultimately, the information that we get from these records has an impact on the number of Medical Department personnel placed in our hospital systems, the types of major equipment that will be required—and of course, at the bottom line, the funds the Bureau will receive from Congress to operate an efficient medical care system.

I know that for you to do an efficient job three things are necessary: a quality control program, a continuing program of training for your personnel, and constant updating on the latest developments in medicine and in methods of coding. As I look into the

future, the demand for information from the medical record is going to be greater and greater. So we are depending on medical record administrators to assure us that we will have accurate and complete information from the medical record, as well as a well-trained staff in each of our hospitals.

More than 20 years ago, Dr. Robert A. Moore, then vice chancellor of health professions at the University of Pittsburgh, stated: "Medical records and statistics bid fair to become the most important diagnostic and prognostic instruments of the future. Responsibilities for calibrating those instruments and for assuring their completeness, accuracy, and accessibility rest squarely on the shoulders of a well staffed and equipped record department in the clinic, the hospital, the public health department, the research organization." This statement is as true today as it was then, and I hope you will convey this message to your staffs when you get back to your hospitals. Please tell them how the work they do ties in with what is being done at the Bureau. (Of course, I am not forgetting how the output of the medical record department meets the needs of our hospitals and affects the decisions that are made in each hospital.)

I know that each of you has many ideas on how medical record administrators can be of even greater help to the Medical Department than they are today. We would like to have the benefit of your thinking and ideas, and hope that you will communicate with Mrs. Muriel Brandford, at the Naval Medical Data Services Center. We are depending on her to coordinate this type of information, and she will be reporting to us at the Bureau at the Quality Assurance Committee meetings.

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## Preventing Occupational Skin Disease

Occupational dermatitis is generally recognized as the most common type of occupational disease.

Skin disorders account for approximately half of all occupational illnesses. (Some 74,000 occupational skin disease cases were reported in the U.S. in 1975.) But despite the high prevalence of these disorders, they are not the most serious or disabling health problem in the work place.

Occupational dermatitis is usually preventable. The importance of personal cleanliness cannot be too

strongly emphasized.

When facility and process design cannot eliminate all contact with irritants, the worker must use personal protective equipment. Such equipment includes gloves, gauntlets, aprons, and boots. These items, along with face shields, are effective in most situations.

Barrier creams and lotions may be used to supplement, but not to replace, personal protective equipment. The best protection is probably provided by organic silicones, which repel water-dissolved irri-

tants, including acids and alkalis.

Protective-barrier agents should be applied to clean skin. When skin becomes soiled, both barrier and soil should be washed off and cream reapplied.

Dermatitis occurs most frequently in new and young workers. It is important to educate them, before they begin work, to avoid washing with solvents and harsh soaps used for cleaning equipment.

Institution of proper hygiene is the key to prevention of occupational dermatitis.



# Immersion Hypothermia

LT William C. Donehue, MC, USNR     CDR Edna L. Peters, NC, USN

While the civilian physician must be able to diagnose and treat victims of exposure hypothermia, particularly as it relates to the increasing number of winter-sports enthusiasts, the Navy physician must also be prepared to treat sailors and aviators who are victims of immersion hypothermia. These individuals have the misfortune of being lost from naval vessels or aircraft operating in the world's cold-water regions.

Man is, by nature, dependent upon a stable temperature for his internal organs (core temperature). The normal thermoregulatory process maintains this temperature within a 1°F variation. Deviations from the normal core temperature can result in enzyme deactivation, which will stop energy-producing reactions at the cellular level.

Immersion in cold water is especially dangerous, because great quantities of heat can be extracted from the victim's body in a very short time. The surrounding water quickly diffuses this extracted heat, thus acting as a heat sink of near infinite capacity. Man cannot, for example, maintain a stable core temperature during long-term exposure to water that has a temperature of 75°F (24°C).

Survival of the victim of cold-water immersion depends on the degree to which the core temperature is depressed. Body heat loss is contingent on five major factors:

- the gradient between the victim's temperature and that of the water;
- the amount of peripheral vasoconstriction, and thus the rate of transfer of heat from the core to the skin;
- body insulation;
- water motion;
- duration of immersion.

LT Donehue is currently serving as flight surgeon, Carrier Air Wing Eight, FPO New York 09501.

CDR Peters is serving at the U.S. Branch Dispensary, Marine Corps Air Station, Iwakuni, Japan.

## Body responses to hypothermia

Physiologically, the body exhibits two major methods of heat conservation. The first, peripheral vasoconstriction and limb blood flow shunting, serves to limit the blood's contact with the cold environment. The second, shivering and increased muscle tone, increases metabolic heat production. Together, these responses tend to maintain the core temperature within physiological limits as long as possible.

The states of accidental hypothermia have been divided into the following three phases by Jessen and Hegelsten (1):

- **Excitation stage.** This is the earliest stage of hypothermia. At this point, peripheral vasoconstriction and shivering occur. This stage occurs with core temperatures ranging from 93°F (34°C) to slightly below normal.

- **Adynamic stage.** In this stage, muscular activity decreases while respiratory rate and cardiac minute volume increase. Core temperature during this stage is between 86°F (30°C) and 93°F (34°C).

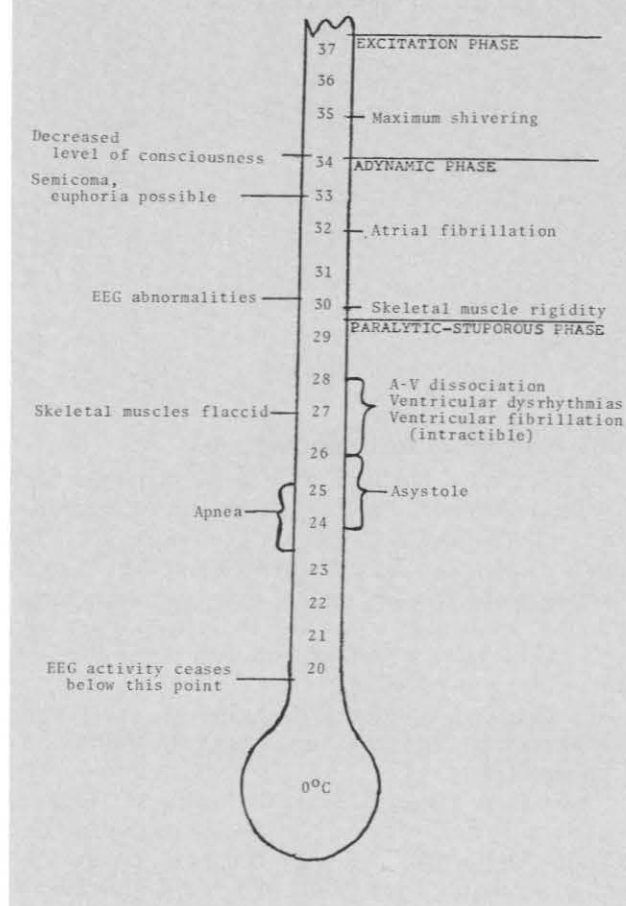
- **Paralytic-stuporous stage.** During this stage, the victim's bodily functions deteriorate dangerously. The prognosis is grim. Function of all systems—central nervous, respiratory, musculoskeletal, renal, and cardiovascular—approaches zero, and the patient may be mistaken for dead despite careful clinical examination. Persistent ECG dysrhythmias and/or asystole may occur. EEG findings may be abnormal.

Figure 1 further delineates the physiological changes associated with lowering of the body's core temperature. It must be remembered that this diagram is only a general guide, not a specific statement of functional decay.

## Treatment

Treatment of the hypothermic patient is crucial. The prognosis for the victim is entirely dependent upon correct and timely application of proper treatment methods.

FIGURE 1



In areas of potential cold exposure, hypothermia should be suspected even in the presence of other possible diagnostic entities that might be responsible for the patient's lowered level of consciousness. Resuscitation efforts must be started on each victim at once, even though signs of life may be absent because of the effects of cold.

For many years the mainstay of hypothermia treatment has been rapid external rewarming. This can be accomplished by placing the victim in an immersion bath of warm water at 106°F - 108°F (41°C - 42°C). The patient should be kept in the warm bath until he feels warm subjectively. (An adequate substitute for a bathtub on a naval vessel is a liferaft LP-1, which can be inflated and filled with warm water.)

"Rewarming shock," a paradoxical drop in core temperature associated with the early phase of warming, makes external rewarming extremely hazardous. The patient must be continuously monitored to ascertain his core temperature. Rectal probes or posterior pharyngeal probes are suggested for this purpose, if available.

It must be remembered that standard hospital thermometers seldom record below 96°F (36°C). The Standard Laboratory Thermometer, FSN 6685-444-3000, may be used to record lower temperatures, thus preventing a false sense of security.

Recent research (2) and clinical experience now suggest that, whenever possible, internal rewarming—warming the core in advance of the body surface—is a technique permitting a more rapid return to normal body temperature without the ECG abnormalities and cardiac-output decreases found when the more traditional methods are used. While many methods of internal rewarming have been described, NAVMED P5052-29 suggests that the most practical means is peritoneal dialysis, using a 40°C dialysis solution and an arterial-venous shunt, connected to an external rewarming coil. Unfortunately, the equipment and skills these internal rewarming methods require are not present on aircraft carriers or stations having branch hospitals or dispensaries.

With standard external rewarming methods in the very cold patient, 100% oxygen and/or ventilatory assistance may be needed until the patient warms sufficiently to maintain adequate ventilation on his own.

While the patient is undergoing external rewarming, care should be taken to avoid unneeded physical manipulation, since the myocardium, when chilled, is very irritable. Malignant dysrhythmias may supervene. All such cardiac arrhythmias will be refractory to cardioversion until the core temperature has exceeded 82.4°F (28°C). This will be an exceedingly troublesome problem when associated with rewarming shock in a patient in whom internal rewarming techniques cannot be used. Further caution must be employed, when attempting cardioversion on a wet victim, to ensure that the resuscitation team does not receive electrical shock.

Further therapy for the hypothermia victim includes intravenously administered bicarbonate to combat metabolic acidosis. The patient's urinary output should be monitored to detect fluid depletion due to "cold diuresis." Hypokalemia, probably due to an intracellular sequestration of potassium, may be seen, but this usually does not require correction.

The patient must be closely monitored for many hours and should be retained in sickbay until he or she is obviously fit for duty. Late complications of any of the involved organ systems are possible with profound hypothermia. These will be minimized by prompt diagnosis, based upon a high index of suspicion, rapid rewarming, and careful monitoring of core temperature.

## References

1. Jessen K, Hegelsten JO: Search and rescue service in Denmark with special reference to accidental hypothermia. *Aerospace Med* 43:787-791, 1972.
2. Technical Information Manual for Medical Corps Officers, Chapter 29, Cold Injury, NAVMED P-5052-29. Department of the Navy, Bureau of Medicine and Surgery, 1976, pp 11-14.

**PA PROGRAM REINSTITUTED . . .** Hospital corpsmen in pay grades E-5 through E-9 are once again eligible for selection for promotion to chief warrant officer, under the newly reestablished Physician's Assistant Program.

Eligibility requirements include the following. Candidates must:

- Be U.S. citizens, at least 21 years old but under 37.
- Have a minimum GCT of 55 and ARI of 55, or a WK/AR of 110.
- Possess a high school diploma or its equivalent.
- Have no courts martial or civil convictions for two years.
- Be recommended by their commanding officers.
- Agree to 54 months of obligated service from the time PA training begins.

On 10 January, a selection board will meet to pick the best qualified PA applicants for a class beginning training at NRMCM Portsmouth, Va., in April.

A second group of PA applicants will be picked next month to enter training at NRMCM San Diego in mid-summer.

On successful conclusion of training, graduates will be appointed chief warrant officers.

Applications for admission to the San Diego PA course should reach BUMED (Code 34) no later than 1 February. Additional details on application requirements are available in R010049Z Nov 78, NAVOP 156/78.

**FOR FLIGHT SURGEONS . . .** CNO Message 271959Z Oct 78, Use of Privacy Act Statements in Aircraft Mishap Investigations, states that the individual requesting information in the course of such an investigation must make certain that the Privacy Act statement is made available to the responding individual. This includes information being sought for the MOR (OPNAV 3750/8A through 3750/8I). The required statement is included in the CNO message. A supply of these statements should be produced locally and kept with the MOR forms.

**ADVANCED HEALTH POLICY, PLANNING COURSE . . .** Up to 100 senior Medical Department officers in line for top leadership responsibilities will be selected annually for training in a new Advanced Health Policy and Planning Course to be conducted at the Naval School of Health Sciences, Bethesda, Md.

The course is being inaugurated because of limited availability of training billets at such existing service schools as the Naval War College, and because of a need for training that—while retaining emphasis on

operational support—is more oriented toward Medical Department requirements.

The new course will:

- Familiarize attendees with the Defense decision-making environment, both nationally and internationally, so that they can better discharge their leadership roles by being more aware of salient contingencies and constraints.
- Provide a working knowledge of DOD policy—and, in particular, health policy—as it relates to contingency planning and support.
- Prepare each attendee to serve as a leader on the Navy medical support team, capable of planning and directing effective and efficient medical support, as required by the operating forces.
- Provide an update on Medical Department plans and programs, with emphasis on emergent trends of interest to top management.

The new course covers a seven-week period and will be offered four times a year, beginning this month. Enrollment will not exceed 25 students per class.

Candidates will be selected in BUMED from among those Medical Department officers currently in, or being considered for assignment to, billets that have significant operational and/or contingency planning responsibilities. Student input will be determined solely on the basis of specified billet requirements identified by BUMED (Code 3).

**MEDICAL EMERGENCY COMPUTER MODEL DEVELOPED . . .** At the Naval Research Laboratory, Dr. Paul Richards, head of the Fleet Medical Support Project, has developed a computer model that can simulate the many complexities of an emergency medical system in 10 minutes or less, at a cost of under \$100.

"A single mock drill conducted to simulate the medical response to an aviation disaster at an airport, on the other hand, requires many months of preparation, a lot of manpower, and costs approaching \$100,000," says Dr. Richards. "And even greater expenditures of time, money, and manpower would go into an exercise designed to test a military combat zone medical care system."

The new computer model, called "NAMES II" (for Navy Amphibious Medical Evacuation Simulation), simulates medical treatment and evacuation of casualties within a combat zone. The model provides for various levels of casualty treatment facilities and a full range of evacuation options.

NAMES II is currently being used by medical planners in the military departments, but it is expected also to be of considerable interest to civilian organizations concerned with medical emergencies.

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